



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

SEP 17 2004

Mr. Tom Sauta
Hydro-Test Products
85 Hudson Road
P.O. Box 286
Stow, MA 01775

Ref No. 03-0282

Dear Mr. Sauta:

This is in response to your letter and subsequent telephone conversation with Sandra Webb of this office, requesting clarification of the requalification and maintenance requirements of DOT specification and exemption cylinders under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). I regret the delay in responding and any inconvenience it may have caused. Your questions are paraphrased and answered below.

Q1. Section 180.205(i)(2) states that when a cylinder is condemned, the requalifier must stamp a series of X's over the DOT specification number or stamp "CONDEMNED" on the shoulder, top head, or neck. Alternatively, the requalifier may render the cylinder incapable of holding pressure at the direction of the owner. What requirements apply to carbon fiber fully wrapped cylinders? Could an indelible marker or a label be used in lieu of stamping? Do you have an acceptable method that would not destroy the cylinder?

A1. A carbon fiber fully wrapped cylinder must be manufactured, tested, marked, and certified in accordance with the requirements specified in the "Basic Requirements for Fully Wrapped Carbon-Fiber Reinforced Aluminum Lined Cylinders (DOT-CFFC) standard and applicable exemption. Specifically, the requirements in the referenced standard state that the cylinder must be marked in the composite overwrap; stamping of the composite surface is not authorized. Therefore, a "CONDEMNED" label is permitted if it is securely affixed to the cylinder near, but not obscuring, the original manufacturer's label and overcoated with epoxy.

Q2. Section 180.205(g)(5) states that the minimum test pressure must be maintained for at least 30 seconds. May a specification DOT 3AL 1800 cylinder with a minimum test pressure of 3000 psi be tested to 3200, 3300, or 3,400 psi ? What is the maximum allowable test pressure?

A2. Currently, the HMR do not address the maximum pressure to which a cylinder may be subjected during requalification testing. We may consider addressing this issue in a future rulemaking. However, we recommend cylinders not be pressurized to test pressures that exceed the percent yield or ultimate tensile strength specified for that specification.



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§ 180.205
§ 180.209 (b)
§ 180.215

Q3. Section 180.205(g)(5) states that a test may be repeated in case of equipment malfunction. However, this section does not state how many times the retest may be performed. When due to equipment malfunction, may the retest be repeated more than one time? If so, is there a limit on the number of repeated tests?

A3. Due to the complexity of this issue, we will address your concern in a separate letter.

Q4. The provisions in § 180.209(b) state a cylinder must be removed from a cluster, bank, group, rack, or vehicle each time it is filled.

(a) How does the requalifier know that the cylinder has been removed from the cluster? Is it the requalifier's responsibility or the cylinder owner's to ensure that this requirement is fulfilled? Should the cylinder owner provide paperwork to the filler stating that these provisions have been met?

A4 (a). Before each refill, § 180.209(b)(1)(iii) requires a cylinder to be removed from any cluster, bank, group, rack, or vehicle so that a hammer test may be performed in accordance with CGA Pamphlet C-6. Therefore, the removal of the cylinder is required and the responsibility lies with the cylinder owner. Unless the requalification facility has reason to believe noncompliance, the cylinder owner's verbal assurance that the provisions in 180.209(b)(1)(iii) have been met are acceptable.

(b) Are DOT 3A cylinders used in Oxygen service that are not in a cluster, bank, group, rack, or vehicle and meet all of the requirements of § 180.209(b) authorized to be requalified every ten years?

A4 (b). Yes, if the cylinder is a DOT 3A or 3AA cylinder manufactured after December 31, 1945, and all the provisions in § 180.209(b) are met, the cylinder is authorized to be requalified every ten years.

Q5. Section 180.215(a)(4) requires a requalification facility to maintain current copies of those portions of the HMR applicable to the cylinder requalification and marking activities at that location.

(a) May the applicable sections be downloaded from DOT website?

A5 (a). Yes, all the applicable sections of the HMR may be downloaded from the Government Printing Office (GPO) web site, which can be accessed through the our website at <http://hazmat.dot.gov>.

(b) The latest edition of the HMR dated October 1, 2003, is not normally available in book form from a Government bookstore or private source until March 2004. Are the "early editions" of the HMR acceptable for use? Please clarify the difference between early edition and final edition.

A5 (b). The early editions of the HMR you reference are compiled and published by commercial vendors. The volume containing the HMR, 49 CFR Parts 100 – 185, is revised October 1st of each year. These early editions are available shortly after this date. The GPO edition of the HMR is usually not available for purchase until the earlier part of the following year. The vendors also publish a final edition that is a reprint of the GPO edition.

I hope this information is helpful. If we can be of further assistance, feel free to contact us.

Sincerely,

A handwritten signature in cursive script that reads "Hattie L. Mitchell". The signature is written in black ink and is positioned above the printed name and title.

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Standards

20/01/11

Webb
§ 180.205
§ 180.209(b)
§ 180.215
Cylinders
03-0282

November 7, 2003

Mr. Edward T. Mazzullo
Director, Office of Hazardous Materials Standards
U.S. DOT/RSPA (DHM-10)
400 7th Street S.W.
Washington, D.C. 20590-0001

I would appreciate clarification on the following questions, pertaining to cylinder re qualification;

- 1) What is the recommended procedure for proper marking of a condemned carbon fiber fully wrapped cylinder. Section 180.205(i)(2) states that a series of X's be stamped over the DOT specification number and marked pressure... However this section also states that the cylinder can only be rendered incapable of holding pressure at the discretion of the cylinder owner. By steel stamping onto the fiber wrapping a series of X's, the re qualifier will have render the cylinder incapable of holding pressure before obtaining the owners permission. Would this be acceptable ? Could an indelible marker or a label be used in lieu of stamping ? Do you have any other acceptable method that would not destroy the cylinder ?
- 2) Section 180.205(g)(5) states that the minimum test pressure must be maintained for at least 30 seconds. A maximum test pressure is not stated. Can a specification DOT3AL1800 cylinder with a minimum test pressure of 3000 psi be tested to 3200 psi, 3300 psi, 3400 psi ...? With smaller size cylinders becoming more common, it is sometimes difficult to stop the test pressures at exactly the minimum test pressure. What is the maximum test pressure allowable ?
- 3) Section 180.205(g)(5) also states that a test may be repeated in case of equipment malfunction. The section does not state how many times that retest can be performed. Can the retest due to equipment malfunction be performed more than 1 time and if so is there any limit as to how many times ?
- 4) Section 180.209(b) states that DOT specification 3A and 3AA cylinders meeting all provisions in this section can have the re qualification period extended from 5 years to 10 years. In section (b) of this paragraph it states that the cylinder be removed from any cluster, bank, group, rack or vehicle each time it is filled. Two questions;
 - a) How does the re qualifier know that the cylinder has been removed from any cluster, bank, group, rack or vehicle each time it is filled ? Is it the re qualifiers responsibility or the cylinder owner responsibility to insure that this requirement is fulfilled ? Should any paperwork be involved from the cylinder owner stating that these provision have been met during the re qualification period ?
 - b) Cylinders that are **not** in any cluster, bank, group, rack, or vehicle that meet all of the requirements of section 180.209(b), such as specification 3A cylinders used as portable Oxygen cylinders, are they allowed to be re qualified per this section for a 10 year re qualification ?

HYDRO-TEST PRODUCTS INC.

85 HUDSON ROAD P.O. BOX 286
STOW, MA 01775

Tel # 800-225-9488 Fax # 978-897-1942 Email: tfsauta@hydro-test.com

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- 5) Section 180.215(a)(4) states that current copies of this subchapter applicable to cylinder re qualification and marking activities at that location must be maintained. Please clarify if:
- a) Applicable sections downloaded from the DOT website are acceptable ?
 - b) Are the "early editions" of the CFR acceptable ? Even though the latest edition, may be for example dated October 1, 2003, are not normally available in book form from a Government bookstore or other private sources in the final form edition until March of 2004. Will there be a violation if the early edition is used throughout the year ? Please clarify what is the difference between early edition and final edition.

Thank you in advance for your time in answering these questions.

Best regards,

Tom Sauta
Hydro-Test Products

HYDRO-TEST PRODUCTS INC.

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STOW, MA 01775

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Fax # 978-897-1942

Email: tfsauta@hydro-test.com

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